

445nm Spatial Light Output Blue Laser

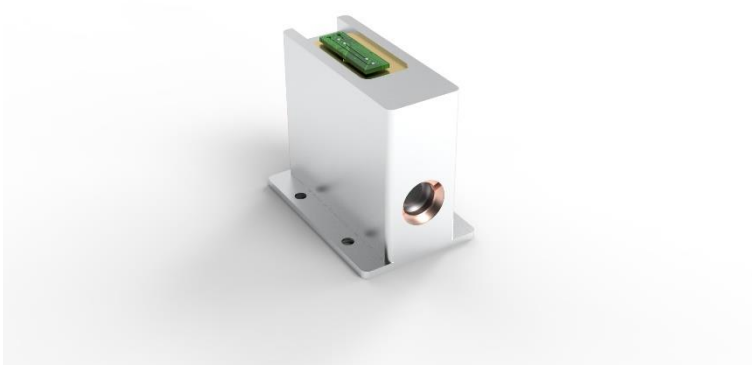
K445HSEWN Series

Features:

- ◆ 445nm wavelength
- ◆ Up to 20W output power
- ◆ Spatial light output
- ◆ High beam quality

Applications:

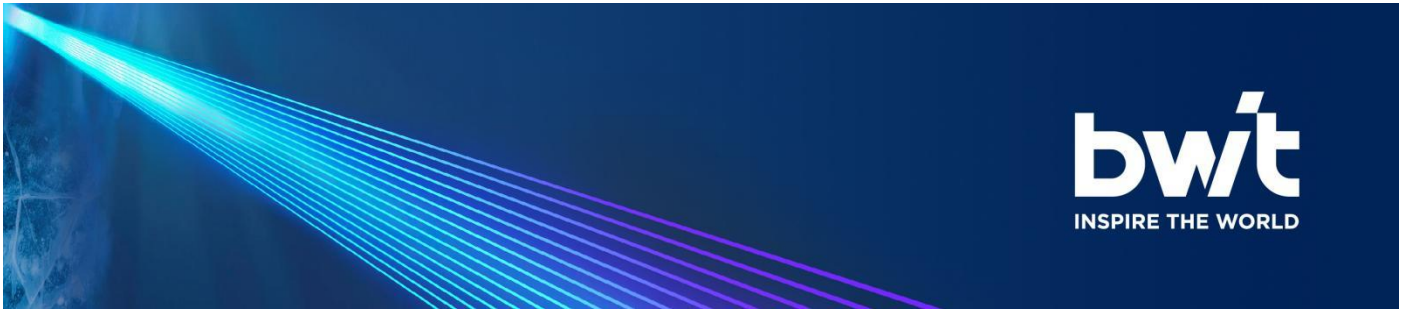
- ◆ Laser engraving
- ◆ Scientific research



BWT, founded in 2003, is committed to the mission of "let the dream drive the light", the vision of becoming the "Global leader in laser solutions", and the value of "Outstanding innovation", providing diode laser, fiber laser, ultra-fast laser products and solutions to global customers.

The company pursues continuous innovation and insists on autonomous and controllable advanced process and technology. With Beijing headquarters as the core, BWT has successively established production and R&D centers in Jiangsu, and Shenzhen, and invested in the construction of an intelligent and digital production base in Tianjin. To build a high level of technical strength and product quality, BWT set up a German subsidiary in 2020, introducing European quality standards, and taking a solid step for the internationalization of R&D, production and technological innovation.

Up to now, BWT has traded more than 10 million lasers worldwide. BWT's products are available in more than 70 countries and regions, with applications involving industry, medical, commercial, scientific research, information, and many other fields.



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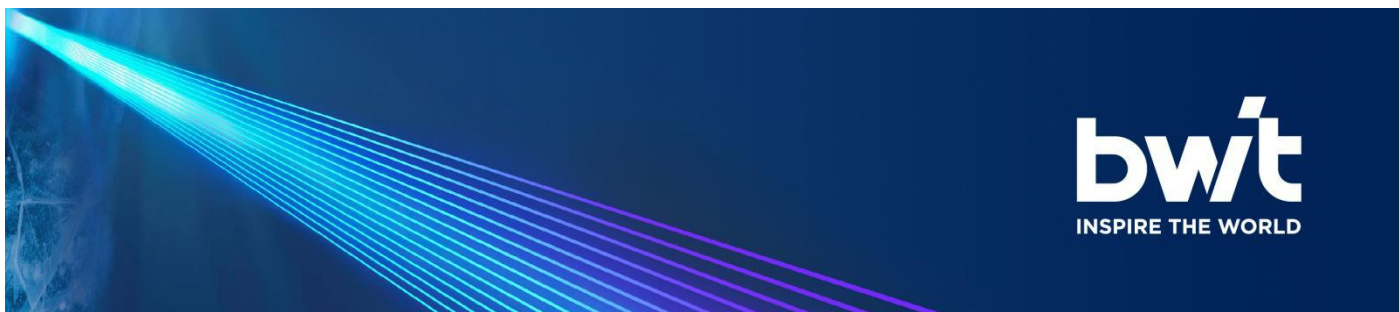
K445HSEWN Series

| Specifications(20°C) | | Symbol | Unit | K445HSEWN-20.00WN0N | | |
|-----------------------------------|--------------------------------------|--------------------------|-------|---------------------|---------|---------|
| | | | | Minimum | Typical | Maximum |
| Optical Data⁽¹⁾ | Total CW Output Power | P_{bol} | W | - | 20 | - |
| | Center Wavelength | λ_c | nm | 445±20 | | |
| | Spectral Width (FWHM) | $\Delta\lambda$ | nm | - | 6 | - |
| | Wavelength Shift with Temperature | $\Delta\lambda/\Delta T$ | nm/°C | - | 0.1 | - |
| | Wavelength Shift with Current | $\Delta\lambda/\Delta A$ | nm/A | - | 1 | - |
| Electrical Data | Electrical-to-Optical Efficiency | PE | % | - | 30 | - |
| | Operating Current | I_{bol} | A | - | 3 | 3.5 |
| | Threshold Current | I_{th} | A | - | 0.3 | - |
| | Operating Voltage | V_{op} | V | - | 18 | 20 |
| | Slope Efficiency | η | W/A | - | 7.4 | - |
| Spot Data | Spot Size @ Focal plane | - | μm | - | 70*160 | - |
| | Divergent full width | - | mrad | - | - | 70*70 |
| | Focus length | - | mm | - | - | 50 |
| Others | ESD | V_{esd} | V | - | - | 500 |
| | Storage Temperature ⁽²⁾ | T_{st} | °C | -20 | - | 70 |
| | Lead Soldering Temp | T_{ls} | °C | - | - | 260 |
| | Lead Soldering Time | t | sec | - | - | 10 |
| | Operating Temperature ⁽³⁾ | T_{op} | °C | 15 | - | 30 |
| | Relative Humidity | RH | % | 15 | - | 75 |

(1) Data measured under operation output at 20W@20°C.

(2) A non-condensing environment is required for operation and storage.

(3) Operating temperature defined by the thermistor. Acceptable operating range is 15°C~30°C, but performance may vary.



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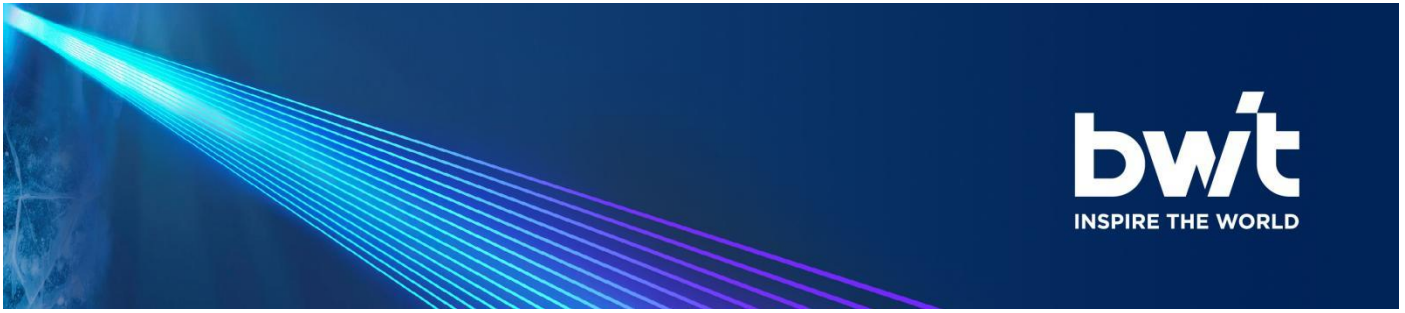
K445HSEWN Series

| Specifications(20°C) | | Symbol | Unit | K445HSEWN-15.00WN0N | | |
|-----------------------------------|--------------------------------------|--------------------------|-------|---------------------|---------|---------|
| | | | | Minimum | Typical | Maximum |
| Optical Data⁽¹⁾ | Total CW Output Power | P_{bol} | W | - | 15 | - |
| | Center Wavelength | λ_c | nm | 445±20 | | |
| | Spectral Width (FWHM) | $\Delta\lambda$ | nm | - | 6 | - |
| | Wavelength Shift with Temperature | $\Delta\lambda/\Delta T$ | nm/°C | - | 0.1 | - |
| | Wavelength Shift with Current | $\Delta\lambda/\Delta A$ | nm/A | - | 1 | - |
| Electrical Data | Electrical-to-Optical Efficiency | PE | % | - | 30 | - |
| | Operating Current | I_{bol} | A | - | 3 | 3.5 |
| | Threshold Current | I_{th} | A | - | 0.3 | - |
| | Operating Voltage | V_{op} | V | - | 13.5 | 15 |
| | Slope Efficiency | η | W/A | - | 5.5 | - |
| Spot Data | Spot Size @ Focal plane | - | μm | - | 70*180 | - |
| | Divergent full width | - | mrad | - | - | 70*70 |
| | Focus length | - | mm | - | - | 50 |
| Others | ESD | V_{esd} | V | - | - | 500 |
| | Storage Temperature ⁽²⁾ | T_{st} | °C | -20 | - | 70 |
| | Lead Soldering Temp | T_{ls} | °C | - | - | 260 |
| | Lead Soldering Time | t | sec | - | - | 10 |
| | Operating Temperature ⁽³⁾ | T_{op} | °C | 15 | - | 30 |
| | Relative Humidity | RH | % | 15 | - | 75 |

(1) Data measured under operation output at 15W@20°C.

(2) A non-condensing environment is required for operation and storage.

(3) Operating temperature defined by the thermistor. Acceptable operating range is 15°C~30°C, but performance may vary.



445nm Spatial Light Output Blue Laser

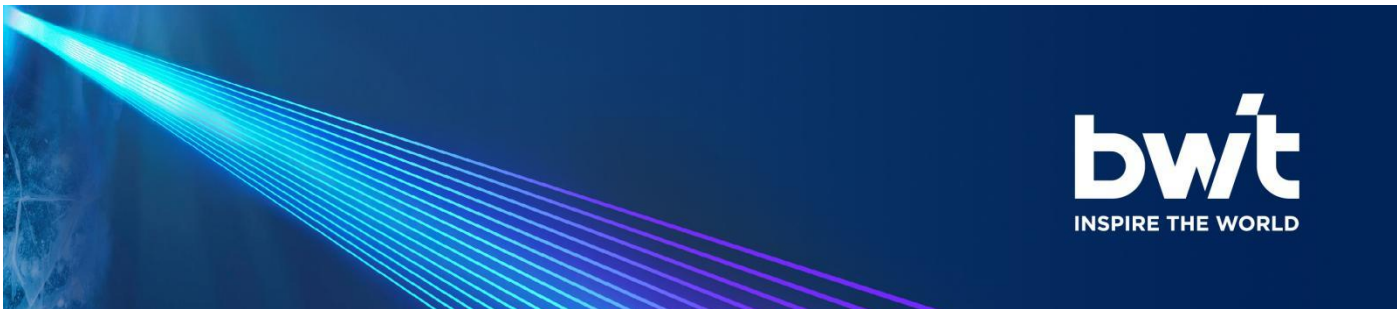
K445HSEWN Series

| Specifications(20°C) | | Symbol | Unit | K445HSEWN-10.00WN0N | | |
|-----------------------------|--------------------------------------|--------------------------|-------|---------------------|---------|---------|
| | | | | Minimum | Typical | Maximum |
| Optical Data ⁽¹⁾ | CW Output Power | P_{bol} | W | - | 10 | - |
| | Center Wavelength | λ_c | nm | 445±20 | | |
| | Spectral Width (FWHM) | $\Delta\lambda$ | nm | - | 6 | - |
| | Wavelength Shift with Temperature | $\Delta\lambda/\Delta T$ | nm/°C | - | 0.1 | - |
| | Wavelength Shift with Current | $\Delta\lambda/\Delta A$ | nm/A | - | 1 | - |
| Electrical Data | Electrical-to-Optical Efficiency | PE | % | - | 30 | - |
| | Operating Current | I_{bol} | A | - | 3 | 3.5 |
| | Threshold Current | I_{th} | A | - | 0.3 | - |
| | Operating Voltage | V_{op} | V | - | 9 | 10 |
| | Slope Efficiency | η | W/A | - | 3.75 | - |
| Spot Data | Spot Size @ Focal plane | - | μm | - | 70*160 | - |
| | Divergent full width | - | mrad | - | - | 70*70 |
| | Focus length | - | mm | - | - | 50 |
| Others | ESD | V_{esd} | V | - | - | 500 |
| | Storage Temperature ⁽²⁾ | T_{st} | °C | -20 | - | 70 |
| | Lead Soldering Temp | T_{ls} | °C | - | - | 260 |
| | Lead Soldering Time | t | sec | - | - | 10 |
| | Operating Temperature ⁽³⁾ | T_{op} | °C | 15 | - | 30 |
| | Relative Humidity | RH | % | 15 | - | 75 |

(1) Data measured under operation output at 10W@20°C.

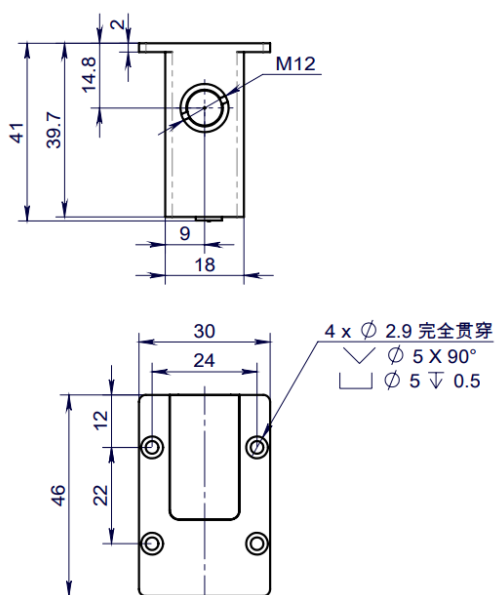
(2) A non-condensing environment is required for operation and storage.

(3) Operating temperature defined by the thermistor. Acceptable operating range is 15°C~30°C, but performance may vary.



445nm Spatial Light Output Blue Laser K445HSEWN Series

Package Dimensions (mm)



OPERATING NOTES

- ◆ Avoid eye and skin exposure to direct radiation during operation.
- ◆ ESD precautions must be taken during storage, transportation and operation.
- ◆ Short-circuit is required between pins during storage and transportation.
- ◆ Please connect pins to wires by solder instead of using socket when operation current is higher than 6A. Soldering point should be close to the root of the pins. Soldering temperature should be lower than 260°C and time shorter than 10 second.
- ◆ Use constant current power supply to avoid surge current during operation.
- ◆ Laser diode must be used according to the specifications.
- ◆ Laser diode must work with good cooling.



Declaration: information and specifications contained herein are deemed to be reliable and accurate. BWT reserves the right to change, alter or modify the design and specifications of these products at any time without notice.22-09.